



bublon

NATURAL • CUSTOMIZED • SPHERES



# BUBLON® SPHERES A NEW DIMENSION IN PRODUCT OPTIMIZATION

BUBLON® is the latest development to come from the globally successful Binder+Co Group and operates as an independent subsidiary, supplying customized microspheres, based on controlled thermal expansion of the natural raw material perlite, as well as complete microsphere production systems.



BUBLON® SPHERES are manufactured using a patented, energy-efficient process and are optimized to meet your individual requirements, for use in a wide range of applications, for example, in the building materials, plastics and coatings industries.

Within the area of BUBLON® SERVICES, the Bublon team can also provide you individual support, as a research based expert partner, in research and development, ranging from the selection of suitable raw materials through to sampling and joint development of products.

Based on the modular BUBLON® SYSTEMS design, Bublon GmbH is also able to supply complete perlite expansion plants based on its 120 years of expertise in processing technology and in machine and plant construction.



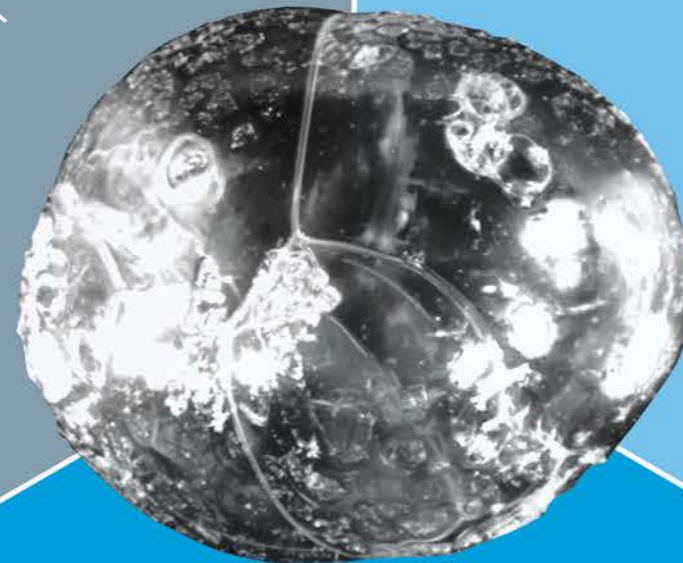


## BUBLON® SPHERES – CUSTOM-MADE SOLUTIONS FOR INNOVATIVE APPLICATIONS

The BUBLON® Spheres you use are specifically tailored to match your application needs and are as unique as your product. BUBLON® Spheres increase your value added both through their unique customized product and competitive advantages and as a sustainable material with optimized cost-effectiveness.



BUBLON® SPHERES



BUBLON® SERVICES



## BUBLON® SERVICES – YOUR EXPERT PARTNER FOR PRODUCT DEVELOPMENT AND AFTER-SALES SERVICE

Using BUBLON® Services, you have the close support of a strong team. As required, we can provide assistance throughout the entire process, with consulting advice and engineering design, assembly and commissioning work, customer-specific product development and implementation, individual support for special applications, laboratory analysis and sampling, operational support for customer systems and after-sales services. You can depend on the know-how and consulting expertise of our highly qualified Bublon team.

## BUBLON® SYSTEMS – SET NEW STANDARDS IN EXPANSION TECHNOLOGY

The innovation of BUBLON® plant technology lies in the controlled thermal expansion of the natural raw material perlite. The patented BUBLON® process ensures previously unattainable product properties such as the closed vitrified surface, high mechanical strength, high tensile and compressive strength, high abrasion resistance, no water absorption and optimized insulation properties, opening up a wide range of applications.

BUBLON® SYSTEMS







# BUBLON® SPHERES THE BEST WAY TO OPTIMIZE YOUR PRODUCT



## BUILDING MATERIALS

**BUBLON® - LEADING INSULATION PROPERTIES**  
BUBLON® Spheres are impressive, not just for the first-class insulation properties, high mechanical strength and high abrasion resistance, but also due to the consequent reduction in cycle times in further processing and lower costs.

**BUBLON® - CONFORMS TO THE HIGHEST FIRE PROTECTION CLASSES**  
BUBLON® Spheres are particularly suitable for use in building materials and fire protection. They are incombustible and meet the highest fire protection classes and are therefore a natural, sustainable alternative to conventional building materials.

**BUBLON® - PROTECTS THE ENVIRONMENT**  
BUBLON® Spheres represent a symbiosis of natural raw materials and sustainable production processes. BUBLON® expansion plants save resources and are energy-efficient and operate with low dust and free from flue gas emissions. BUBLON® Spheres can be recycled and returned 100% to the ecological cycle at the end of the product life cycle.



Excellent insulation characteristics



No water absorption



Low environmental impact



Incombustible



## PLASTICS

**BUBLON® - REDUCED WEIGHT**  
BUBLON® Spheres have low specific weight and at the same time excellent product properties, such as high mechanical strength, which allow the production of lighter end products, with simultaneous product stability, resulting in lower costs throughout the value chain.

**BUBLON® - OPTIMIZED WALL THICKNESS**  
BUBLON® Spheres allow you achieve the optimum wall thickness and mechanical strength of the component. This opens up the opportunity for new tailor-made properties for your product, increasing both cost-effectiveness and competitiveness.

**BUBLON® - REDUCES CYCLE TIMES**  
BUBLON® Spheres facilitate the reduction of production process cycle times resulting in increased output. The consequent lower production costs help you improve cost-effectiveness and competitiveness.



Reduced weight



Reduced cycle time



Optimized wall thickness



Improved compressive and tensile strength



## PAINTS & VARNISHES

**BUBLON® - HIGH ABRASION RESISTANCE**  
With BUBLON® Spheres, the quality of your products can be significantly increased in terms of abrasion resistance and dimensional stability.

**BUBLON® - OPTIMIZED INSULATION PROPERTIES - NON-FLAMMABLE**  
BUBLON® Spheres offer an innovative base material for the paint and varnish industry due to their optimum insulation and non-flammable properties.

**BUBLON® - REDUCED WEIGHT - OPTIMUM PRICE-PERFORMANCE RATIO**  
The low weight and simultaneous optimized product characteristics of BUBLON® Spheres help reduce costs throughout the entire production and logistics chain.



Reduced weight



High abrasion resistance



Excellent insulation characteristics



Incombustible



# BUBLON® SPHERES INDIVIDUALLY DEVELOPED PRODUCTS

Your individual BUBLON® Spheres are classified into four main grades. Due to our unique technology and know-how, we are able to offer you different grain sizes, compressive strengths and bulk densities, depending on your requirements, which opens up a new dimension for your product properties.

## BUILDING MATERIALS

- Building materials
- Building chemicals
- Building paints

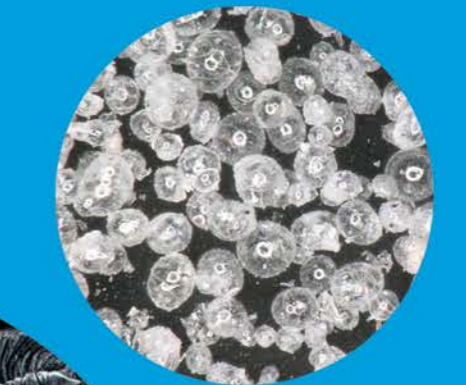
## PLASTICS

- Injection moulding
- Extrusion
- Rotational moulding
- Composites
- Automotive applications

## PAINTS & VARNISHES

- Powder coatings
- Casting compounds
- Insulating materials

# PRODUCT RANGE



1500 13

COARSE

500 35

MEDIUM

200 70

FINE

63 230

X-FINE

25 635

µm Particle size US mesh

150 times magnified

BUBLON® C

BUBLON® M

BUBLON® F

BUBLON® X



# CONVERSION TABLE



NATURAL • CUSTOMIZED • SPHERES

MESH			
meshes	inches [in]	millimeters [mm]	micrometers [µm]
14	0,0555	1,400	1400
16	0,0469	1,180	1180
18	0,0394	1,000	1000
20	0,0331	0,841	841
25	0,0278	0,707	707
30	0,0234	0,595	595
35	0,0197	0,500	500
40	0,0165	0,420	420
45	0,0139	0,354	354
50	0,0117	0,297	297
60	0,0098	0,250	250
70	0,0083	0,210	210
80	0,0070	0,177	177
100	0,0059	0,149	149
120	0,0049	0,125	125
140	0,0041	0,105	105
170	0,0035	0,088	88
200	0,0029	0,074	74
230	0,0025	0,063	63
270	0,0021	0,053	53
325	0,0017	0,044	44
400	0,0015	0,037	37

MASS			
1	kilogram [kg]	2,205	pounds [lbs]
1	metric ton [t]	2205	pounds [lbs]
1	pound [lbs]	0,454	kilograms [kg]
1	metric ton [t]	1,102	short tons
1	short ton	0,907	metric tons [t]
1	metric ton [t]	0,984	long tons
1	long ton	1,016	metric tons [t]

LENGTH (SPEED)			
1	inch [in]	25,400	millimeters [mm]
1	millimeter [mm]	0,039	inches [in]
1	meter [m]	3,280	feet [ft]
1	foot [ft]	0,305	meters [m]
1	yard [yd]	0,914	meters [m]
1	meter [m]	1,094	yards [yd]
1	mile [mi]	1,609	kilometers [km]
1	kilometer [km]	0,621	miles
1	nautical mile [nm]	1,852	kilometers [km]
1	kilometer [km]	0,540	nautical miles [nm]

FUEL CONSUMPTION			
1	mpg (US)	235,215	l/100km
5	mpg (US)	47,043	l/100km
1	l/100km	235,215	mpg (US)
5	l/100km	47,043	mpg (US)
1	mpg (UK)	282,481	l/100km
5	mpg (UK)	56,496	l/100km
1	l/100km	282,481	mpg (UK)
5	l/100km	56,496	mpg (UK)

International	US / British	
1.234,56	1,234.56	unit...

All values are shown in International scheme  
 Approx. Data, rounding differences!  
 Bublon does not guarantee the correctness of the data.

DENSITY		
pounds per cubic foot [lbs/cft]	kilograms per cubic meter [kg/m³]	grams per cubic centimeter [g/cm³]
0,062	1	0,001
1	16,02	0,016
1,6	25	0,025
3,1	50	0,050
4,4	70	0,070
5,0	80	0,080
5,6	90	0,090
6,2	100	0,100
6,9	110	0,110
7,8	125	0,125
9,4	150	0,150
12,5	200	0,200
15,6	250	0,250
18,7	300	0,300
21,8	350	0,350
25,0	400	0,400
28,1	450	0,450
31,2	500	0,500

TEMPERATURE		
[°F]	[°C]	[K]
-459,67	-273,15	0
-4	-20	253,15
5	-15	258,15
14	-10	263,15
23	-5	268,15
32	0	273,15
41	5	278,15
50	10	283,15
59	15	288,15
68	20	293,15
77	25	298,15
86	30	303,15
95	35	308,15
104	40	313,15
122	50	323,15
212	100	485,15
1832	1000	2105,15

VOLUME			
1	liter [l]	0,035	cubic feet [cft]
1	cubic foot [cft]	28,317	liters [l]
1	cubic meter [m³]	35,315	cubic feet [cft]
1	cubic foot [cft]	0,028	cubic meters [m³]
1	imperial gallon [Imp.gal]	4,546	liters [l]
1	liter [l]	0,220	imperial gallons [Imp.gal]
1	US liquid gallon [US.liq.gal]	3,785	liters [l]
1	liter [l]	0,264	US liquid gallons [US.liq.gal]
1	US dry gallon [US.dry.gal]	4,405	liters [l]
1	liter [l]	0,227	US dry gallons [US.dry.gal]

SURFACE			
1	square inch [in²]	645,2	square millimeters [mm²]
1	square inch [in²]	6,452	square centimeters [cm²]
1	square inch [in²]	0,0006452	square meters [m²]
1	square centimeter [cm²]	0,155	square inches [in²]
1	square foot [ft²]	0,093	square meters [m²]
1	square meter [m²]	10,760	square feet [ft²]

PRESSURE			
10	bar	1	megapascal [MPa]
10	bar	1	newton per square millimeter [N/mm²]
10	bar	145	pounds per square inch [psi]
1	pounds per square inch [psi]	0,069	bar
1	pounds per square inch [psi]	6895	pascal [Pa]
1	pounds per square inch [psi]	0,0069	newton per square millimeter [N/mm²]

ENERGY			
1	joule [J]	0,239	calories [cal]
1	watt hour [Wh]	3,600	kilojoule [kJ]
1	watt hour [Wh]	3,412	british thermal units [BTU]

POWER			
1	kilowatt [kW]	1,360	metric horsepower [hp(M)]
1	metric horsepower [hp(M)]	0,735	kilowatt [kW]



bublon<sup>•</sup>  
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